

**$\Sigma_c(2800)$**  $I(J^P) = 1(?)$  Status: \*\*\*Seen in the  $\Lambda_c^+ \pi^+$ ,  $\Lambda_c^+ \pi^0$ , and  $\Lambda_c^+ \pi^-$  mass spectra. **$\Sigma_c(2800)$  MASSES**

The charged ++ and + masses are obtained from the mass-difference measurements that follow. The neutral mass is dominated by the mass-difference measurement, but is pulled up somewhat by the less well-determined but considerably higher direct-mass measurement. It is possible, in fact, that AUBERT 08BN is seeing a different  $\Sigma_c$ .

 **$\Sigma_c(2800)^{++}$  MASS**VALUE (MeV)DOCUMENT ID**2801<sup>+4</sup><sub>-6</sub> OUR FIT**

NODE=B155

NODE=B155205

NODE=B155205

 **$\Sigma_c(2800)^+$  MASS**VALUE (MeV)DOCUMENT ID**2792<sup>+14</sup><sub>-5</sub> OUR FIT**

NODE=B155M+

NODE=B155M+

 **$\Sigma_c(2800)^0$  MASS**VALUE (MeV)DOCUMENT IDTECNCOMMENT**2806<sup>+5</sup><sub>-7</sub> OUR FIT** Error includes scale factor of 1.3.

NODE=B155M0

NODE=B155M0

**2846 $\pm$ 8 $\pm$ 10**AUBERT

08BN BABR

 $B^- \rightarrow \bar{p} \Lambda_c^+ \pi^-$  **$\Sigma_c(2800)$  MASS DIFFERENCES** **$m_{\Sigma_c(2800)^{++}} - m_{\Lambda_c^+}$** VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT**514<sup>+4</sup><sub>-6</sub> OUR FIT****514.5<sup>+3.4</sup><sub>-3.1</sub><sup>+2.8</sup><sub>-4.9</sub>** 2810 $^{+1090}_{-775}$ MIZUK

05

BELL

 $e^+ e^- \approx \gamma(4S)$ 

NODE=B155210

NODE=B155D++

NODE=B155D++

 **$m_{\Sigma_c(2800)^+} - m_{\Lambda_c^+}$** VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT**505<sup>+14</sup><sub>-5</sub> OUR FIT****505.4<sup>+5.8</sup><sub>-4.6</sub><sup>+12.4</sup><sub>-2.0</sub>** 1540 $^{+1750}_{-1050}$ MIZUK

05

BELL

 $e^+ e^- \approx \gamma(4S)$ 

NODE=B155D+

NODE=B155D+

 **$m_{\Sigma_c(2800)^0} - m_{\Lambda_c^+}$** VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT**519<sup>+5</sup><sub>-7</sub> OUR FIT** Error includes scale factor of 1.3.**515.4<sup>+3.2</sup><sub>-3.1</sub><sup>+2.1</sup><sub>-6.0</sub>** 2240 $^{+1300}_{-740}$ MIZUK

05

BELL

 $e^+ e^- \approx \gamma(4S)$ 

NODE=B155D0

NODE=B155D0

 **$\Sigma_c(2800)$  WIDTHS** **$\Sigma_c(2800)^{++}$  WIDTH**VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT**75<sup>+18</sup><sub>-13</sub><sup>+12</sup><sub>-11</sub>** 2810 $^{+1090}_{-775}$ MIZUK

05

BELL

 $e^+ e^- \approx \gamma(4S)$ 

NODE=B155215

NODE=B155W++

NODE=B155W++

 **$\Sigma_c(2800)^+$  WIDTH**VALUE (MeV)EVTSDOCUMENT IDTECNCOMMENT**62<sup>+37</sup><sub>-23</sub><sup>+52</sup><sub>-38</sub>** 1540 $^{+1750}_{-1050}$ MIZUK

05

BELL

 $e^+ e^- \approx \gamma(4S)$ 

NODE=B155W+

NODE=B155W+

**$\Sigma_c(2800)^0$  WIDTH**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>72<sup>+22</sup><sub>-15</sub> OUR AVERAGE</b>				
86 <sup>+33</sup> <sub>-22</sub> <sup>±12</sup>		AUBERT	08BN BABR	$B^- \rightarrow \bar{p} \Lambda_c^+ \pi^-$
61 <sup>+18</sup> <sub>-13</sub> <sup>+22</sup> <sub>-13</sub>	2240 <sup>+1300</sup> <sub>-740</sub>	MIZUK	05 BELL	$e^+ e^- \approx \gamma(4S)$

NODE=B155W0  
NODE=B155W0 **$\Sigma_c(2800)$  DECAY MODES**

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \quad \Lambda_c^+ \pi^-$	seen

NODE=B155220;NODE=B155

<b><math>\Sigma_c(2800)</math> REFERENCES</b>			
AUBERT MIZUK	08BN PR D78 112003 05 PRL 94 122002	B. Aubert <i>et al.</i> R. Mizuk <i>et al.</i>	(BABAR Collab.) (BELLE Collab.)

DESIG=1;OUR EST

NODE=B155

REFID=52615

REFID=50708